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DISTRIBUTION OF GOLD DEPOSITS IN ALASKA.¹

THE deposits hitherto worked on the Yukon River are stream avels, and the region in which most work has been done thus far lies on the great river and its tributaries near the point at which it crosses the eastern boundary of the territory. Along the southern coast of Alaska there are several localities at which quartz mining is carried on, and some at which placers are in operation. A number of deposits exist along the coast in the region of Juneau. Of these much the most important and famous is the Treadwell mine. The Treadwell, on Douglass Island,² produces over half a million a year, from ore which averages only \$2.50 to \$3.00 per ton. Thanks to the enormous scale of the workings, more than half of the gross yield is net profit. The main country rock is a slate of sedimentary origin, and probably of Triassic age. It has been penetrated by a heavy dike of granite and two other intrusive masses. The last of these is a rock of basaltic character, and its eruption seems to have accompanied the mineralization. Both the granite and the slate were ruptured along a zone which is at some points several hundred feet in width, and the interstitial spaces have been filled with ore. In the granite the mass was in great part reduced to irregular fragments, and these have been decomposed and impregnated. In the slate the fractures mostly followed the cleavage, and the deposit there assumes the form of what I call a "stringer lead." The claims to the southward of the Treadwell are controlled by the same company, and are profitable, but the next claim to the northward is said to be too poor to pay.

Silver Bow Basin lies about three miles north of east from

¹Note read before the Washington Geological Society, by Mr. George F. Becker.

²Dr. GEO. M. DAWSON wrote a paper on this mine in *Amer. Geologist*, Aug., 1899.

Juneau. A considerable number of small veins of rather rich ore occur on the southern side of this basin. Although the basin was formerly occupied by a large glacier, the diminished upper end of which is still visible from the locality, parts of the side are covered with rotten rock in place, carrying gold quartz seams and forming what I call a "saprolitic placer." After the retreat of the glacier the basin was occupied by a lake, and the lake beds are successfully worked for gold by the hydraulic process, a very unusual case. Sheep Creek basin is separated from Silver Bow basin by a divide, and the same series of quartz veins extends into it. Some fifty-five miles to the southeast of Juneau lies Sumdum, at which there is a very promising vein already yielding some bullion, although the property is only being developed. At Seward City, near Berner's Bay, about fifty miles northwest of Juneau, there are also veins which are extremely rich at some points, and are yielding gold. On Admiralty Island, at Funters Bay, about thirty miles from Juneau, there are promising veins on which it is expected that mining will be commenced next year. Near Sitka, especially along Silver Bay and in the country to the southeast of it, there are numerous veins some of which have yielded a little gold. Most of them seem rather low grade, and the development is insufficient to justify an opinion as to their future.

At Yakutat Bay, just to the eastward of Mt. St. Elias, there has been some beach mining, as there has also been along the west shore of Kadiak Island. The ease of working and the unlimited supply of sand make beach mining on the western coast of North America very attractive, but the capriciousness of the distribution of pay streaks, and the difficulty of saving the gold, commonly rob such undertakings of success. I am not aware that any notable profit has been made in a single case from beach mines, either in Alaska or to the southward. Nevertheless the amount of gold which occurs in this way is enormous. On Kadiak Island, in Uyak Bay, there are several promising looking gold quartz veins of a couple of feet in thickness. Prospecting is going on there, and should be more

actively prosecuted. On Turn-again arm at the head of Cook's Inlet, where Cook was turned back from his effort to find a "northwest passage," stream gravels are being worked. The only success was on Bear Creek, for some two miles, and I could not ascertain that the average results there were more than about \$5.00 a man a day. I learn from Captain Hansen, of the mail steamer Dora, that richer gravel was discovered after I had left Cook's Inlet, near the head of Turn-again arm.

The island of Unga is in the Shumagin archipelago, about 1000 miles a little south of West from Sitka. Near Delaroff Bay, on this island, is the Apollo Consolidated mine, a highly interesting and an important deposit, which is now yielding at the rate of over \$300,000 a year. The country rock is andesite, and the deposit occupies interstitial spaces in a crushed zone of this rock. The ore averages between \$8.00 and \$9.00 per ton, and a very large part of the gold is free, though heavy bunches of sulphurets are of frequent occurrence in it. This district, in which ore has been found at many points, bears a striking resemblance to Bodie, Cal.

On the island of Oonalaska auriferous quartz has been found, but thus far nothing like a mine has been discovered.

I was accompanied to the Alaskan coast, during the past summer, by Messrs. Wm. H. Dall and C. W. Purington. Mr. Dall took charge of the coal deposits and I of the gold. Our report is naturally not ready, but is expected to appear in the spring.

GEO. F. BECKER.